

Presentation to

U.S. Environmental Protection Agency  
Washington, DC

**Artificial Turf Safety, Research and Facts**

**Darren Gill, Vice-President – Marketing,  
Innovation, Customer Service  
FieldTurf**

October 28, 2014




Artificial Turf Safety

# OVERVIEW



- **The speculation that artificial turf is linked to cancer is not a new issue** – it was first raised more than six years ago, and once the science was done to show there was no link, it receded.
  - Scientific research from academic, federal and state government organizations has **unequivocally failed to find any link between synthetic turf and cancer** – as acknowledged by NBC and other news organizations in their reporting.
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- A decorative wavy line in shades of gray, spanning the width of the slide at the bottom.

- Over the past two decades, there have been more than **60 technical studies and reports** that review the health effects of crumb rubber pertaining to a host of circumstances or conditions – including cancer.
  - It's important to keep in mind what the conclusion from the NBC report was – **a list is not a link, and more research is needed.** They were very clear about this.
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- **FieldTurf is committed** as a company and as an industry to the safety of our fields and the athletes that compete on them.
- This is why we have encouraged the rigorous work from third-parties that has taken place over decades to confirm there are **no negative health effects** connected to synthetic turf, and Field Turf is willing to participate in any new research or studies that would add to the public knowledge.



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# THE SCIENCE



*“The SVOCs identified based on library matches of their mass spectra were not present in toxicological databases evaluated and many are ubiquitous part of consumer products. Similarly, the metal concentrations measured in field samples indicate that the risk would be de minimus among all populations expected to use artificial turf fields”*

BIOACCESSIBILITY AND RISK EXPOSURE TO METALS AND SVOC'S IN  
ARTIFICIAL TURF FIELD FILL MATERIALS AND FIBERS (2013)

Brian T. Pavilonis, Clifford P. Weisel, Brian Buckley, and Paul J. Liroy



*“The majority of the studies have been on higher surface area particles and have concluded they are currently acceptable. Therefore the larger granules used in artificial turf will have even less potential for emissions. For example a study undertaken by the Danish Ministry of the Environment concluded that the health risk on children’s playgrounds that contained both worn tyres and granulate rubber was insignificant. The available body of research does not substantiate the assumption that cancer resulting from exposure to SBR granulate infills in artificial turf could potentially occur.”*

AN OPEN LETTER CONCERNING THE POTENTIAL CANCER RISK FROM  
CERTAIN GRANULATE INFILLS FROM ARTIFICIAL TURF (JULY 2006)

FIFA, Prof. Dr. Jiri Dvorak





*“The uptake of PAH of football players active on artificial grass fields with rubber crumb infill is minimal. If there is any exposure, then the uptake is very limited and within the range of uptake of PAH from environmental sources and/or diet.”*

HYDROXYPYRENE IN URINE OF FOOTBALL PLAYERS AFTER PLAYING ON  
ARTIFICIAL SPORTS FIELD WITH TIRE CRUMB INFILL (DECEMBER 2008)

Joost G. M. van Rooij, Frans J. Jongeneelen



*“An analysis of the concentration of metals in the actual drainage water indicates that metals do not leach in amounts that would be considered a risk to aquatic life as compared to existing water quality standards. Analysis of the laboratory based leaching potential of metals in accordance with acceptable EPA methods indicates that metals will leach from the crumb rubber but in concentrations that are within ranges that could be expected to leach from native soil.”*

EVALUATION OF THE ENVIRONMENTAL EFFECTS OF SYNTHETIC TURF  
ATHLETIC FIELDS (DECEMBER 2008)

Milone & MacBroom



*“Genotoxicity testing of tire crumb samples following solvent extraction concluded that no DNA or chromosome-damaging chemicals were present. This suggests that ingestion of small amounts of tire crumb by small children will not result in an unacceptable hazard of contracting cancer.”*

TOXICOLOGICAL EVALUATION FOR THE HAZARD ASSESSMENT OF TIRE  
CRUMB FOR USE IN PUBLIC PLAYGROUNDS (JULY 2003)

Enviro-Test Laboratories, Alberta Centre for Injury Control and Research, Department of Public  
Health Sciences



*“...risk is well below the de minimis level of  $1 \times 10^{-6}$  (one in one million), generally considered an acceptable cancer risk due to its small magnitude compared to the overall cancer rate”*

EVALUATION OF HEALTH EFFECTS OF RECYCLED WASTE TIRES IN  
PLAYGROUND AND TRACK PRODUCTS (JANUARY 2007)

Office of Environmental Health Hazard Assessment / California Integrated Waste Management  
Board



*“Based upon these findings, the use of outdoor and indoor artificial turf fields is not associated with elevated health risks.”*

HUMAN HEALTH RISK ASSESSMENT OF ARTIFICIAL TURF FIELDS BASED UPON  
RESULTS FROM FIVE FIELDS IN CONNECTICUT (JULY 2010)

Connecticut Department of Public Health Program in Environmental and Occupational Health  
Assessment



*“Eleven different risk assessments applied various available concentrations of COPCs and none identified an increased risk for human health effects as a result of ingestion, dermal or inhalation exposure to crumb rubber.”*

A REVIEW OF THE POTENTIAL HEALTH AND SAFETY RISKS FROM SYNTHETIC  
TURF FIELDS CONTAINING CRUMB RUBBER INFILL (MAY 2008)

New York City Department of Health and Mental Hygiene



*“Levels of chemicals in the air at synthetic turf fields do not raise a significant health concern.” - “There is no significant threat from chemicals leaching into surface water and groundwater. While some chemicals can be released from crumb rubber over time, they are in small concentrations and are reduced by absorption, degradation and dilution - resulting in no significant impact on groundwater or surface water.”*

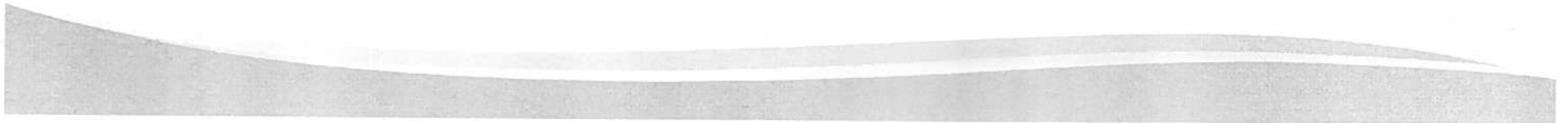
AN ASSESSMENT OF CHEMICAL LEACHING, RELEASES TO AIR AND  
TEMPERATURE AT CRUMB-RUBBER INFILLED SYNTHETIC FIELDS (MAY 2009)  
New York State Department of Environmental Conservation & New York State Department of  
Health



*“The uptake of PAH by athletes who have contact with crumb rubber synthetic turf is negligible. As far as dermal contact is concerned, the Norwegian Institute of Public Health and Radium Hospital (2006) carried out an extensive analysis of possible health concerns. The study found that there was no evidence to suggest that allergic reactions were caused by exposure to crumb rubber and speculated that latex in car tires was either - less available for uptake or was - deactivated as an allergen.”*

REVIEW OF THE IMPACTS OF CRUMB RUBBER IN ARTIFICIAL TURF  
APPLICATIONS (FEBRUARY 2010)

University of California, Berkeley and the Corporation for Manufacturing Excellence (Manex)





*“In summary, an analysis of the air in the breathing zones of children above synthetic turf fields do not show appreciable impacts from COPCs [Contaminants of Potential Concern] contained in the crumb rubber. Therefore, a risk assessment was not warranted from the inhalation route of exposure.”*

AIR QUALITY SURVEY OF SYNTHETIC TURF FIELDS CONTAINING CRUMB  
RUBBER INFILL (MARCH 2009)

New York City Department of Health and Mental Hygiene



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# CONCLUSION



- Scientific research from academic, federal and state government organizations has **unequivocally failed to find any link between synthetic turf and cancer.**
- There can always be more research done, and we are willing to support any additional scientific studies in any way we can, but **we are 100 percent confident in what all the available data tells us** – that anyone using our products should rest assured there are no valid health concerns tied to artificial turf.



# Contact Information

Darren Gill

Vice-President – Marketing,  
Innovation, Customer Service

7445 Cote de Liesse

Montreal Canada H4T 1G2

CANADA

Tel: +1 514 375 2584

Other: +1 800-724-2969 ext. 2584

Mobile: +1 514 862 4094

Email: [DGill@fieldturf.com](mailto:DGill@fieldturf.com)

[www.fieldturf.com](http://www.fieldturf.com)

